

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: TZAHl ARAZI, YOEL MOSHE SHIBOLETH
AND AMIT GAL-ON
- (ii) TITLE OF INVENTION: VECTORS FOR EXPRESSING HETEROLOGOUS

PEPTIDES

AT THE AMINO-TERMINUS OF POTYVIRUS COAT

Protein, methods for use thereof, plantS infected with same and methods
of vaccination using same

- (iii) NUMBER OF SEQUENCES: 33
- (iv) CORRESPONDENCE ADDRESS:
- (A) ADDRESSEE: Mark M. Friedman C/O Mr Bill Polkinghorn
Discovery Dispatch
- (II) STREET: 9003 Florin Way
- (C) CITY: Upper Marlboro
- (D) STATE: Maryland
- (E) COUNTRY: United States of America
- (F) ZIP: 20772
- (v) COMPUTER READABLE FORM:
- (A) MEDIUM TYPE: 1.44 megabyte, 3.5" microdisk
- (B) COMPUTER: Twinhead* Slimnote-890TX
- (C) OPERATING SYSTEM: MS DOS version 6.2,
Windows version 3.11
- (D) SOFTWARE: Word for Windows version 2.0 converted to
an ASCII file
- (vi) CURRENT APPLICATION DATA:
- (A) APPLICATION NUMBER: XXX
- (B) FILING DATE: XXX
- (C) CLASSIFICATION: XXX
- (vii) PRIOR APPLICATION DATA:
- (A) APPLICATION NUMBER: 60/253,136
- (B) FILING DATE: 28 November, 2000
- (C) APPLICATION NUMBER:
- (D) FILING DATE:
- (V) APPLICATION NUMBER:
- (F) FILING DATE:
- (viii) ATTORNEY/AGENT INFORMATION:
- (A) NAME: Friedmam, Mark M.
- (B) REGISTRATION NUMBER: 33,883
- (C) REFERENCE/DOCKET NUMBER: 1686/4
- (ix) TELECOMMUNICATION INFORMATION:
- (A) TELEPHONE: 972-3-5625553
- (B) TELEFAX: 972-3-5625554
- (C) TELEX:

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 837
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

TCAGGCACTC AGCCAACTGT GGCAGATGCT GGAGCTACAA AGAAAGATAA 50
 AGAAGATGAC AAAGGGAAAA ACAAGGACGT TACAGGCTCC GGCTCAGGTG 100
 AGAAAACAGT AGCAGCTGTC ACGAAGGACA AGGATGTGAA TGCTGGTTCT 150
 CATGGGAAAA TTGTGCCGCG TCTTTCGAAG ATCACAAAGA AAATGTCATT 200
 GCCACGCGTG AAAGGAAATG TGATACTCGA TATTGATCAT TTGCTGGAAT 250
 ATAAACCGGA TCAAAATGAG TTATATAACA CACGAGCGTC TCATCAGCAG 300
 TTCGCCTCTT GGTTCACCCA GGTTAAGACG GAATATGATT TGAACGAGCA 350
 ACAGATGGGA GTTGTAATGA ATGGTTTCAT GGTTTGGTGC ATTGAGAATG 400

09963764 092704
 100260 T929660

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(2)      INFORMATION FOR SEQ ID NO:2:
(i)      SEQUENCE CHARACTERISTICS:
          (A)      LENGTH:          279
          (B)      TYPE:             amino acid
          (C)      STRANDEDNESS:     single
          (D)      TOPOLOGY:         linear
(xi)     SEQUENCE DESCRIPTION:     SEQ ID NO:2:
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(2)      INFORMATION FOR SEQ ID NO:3:
(i)      SEQUENCE CHARACTERISTICS:
          (A)   LENGTH:       20
          (B)   TYPE:         nucleic acid
          (C)   STRANDEDNESS: Single
          (D)   TOPOLOGY:     linear
(xi)     SEQUENCE DESCRIPTION: SEQ ID NO:3:
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(2)      INFORMATION FOR SEQ ID NO:4:
(i)      SEQUENCE CHARACTERISTICS:
          (A)  LENGTH:          21
          (B)  TYPE:            nucleic acid
          (C)  STRANDEDNESS:    Single
          (D)  TOPOLOGY:        linear
(xi)     SEQUENCE DESCRIPTION:  SEQ ID NO:4:
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(2) INFORMATION FOR SEQ ID NO:5:
 (1) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 7

- (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Ser His His His His His His
 5 7

- (2) INFORMATION FOR SEQ ID NO:6:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 53
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CAGCTGCAGT CACACCATCA CCATCACCAT TCAGGCACTC AGCCAACTGT 50
 GGC 53

- (2) INFORMATION FOR SEQ ID NO:7:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 55
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

CAGCTGCAGT CACACCATCA CCATCACCAT GATACTGGAG CTACAAAGAA 50
 AGAAG 55

- (2) INFORMATION FOR SEQ ID NO:8:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 55
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

TCAGCATCAG AGCAGAAGCT CATTCAGAG GAGGATCTCG GATCC 45

- (2) INFORMATION FOR SEQ ID NO:9:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 15
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Ser Ala Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly Ser
 5 10 15

- (2) INFORMATION FOR SEQ ID NO:10:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 77
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

CAGCTGCAGT CAGCATCAGA GCAGAAGCTC ATTTAGAGG AGGATCTCGG 50
 ATCCTCAGGC ACTCAGCCAA CTGTGGC 77

- (2) INFORMATION FOR SEQ ID NO:11:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 82
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:x:

CAGCTGCAGT CAGCATCAGA GCAGAAGCTC ATTTAGAGG AGGATCTCGG 50
 ATCCGATACT GGAGCTACAA AGAAAGATAA AG 82

- (2) INFORMATION FOR SEQ ID NO:12:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 81
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single

(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

CAGCTGCAGT CAGCATCAGA GCAGAAGCTC ATTTTCAGAGG AGGATCTCGG 50
ATCCAAGAAA GATAAAGAAG ATGACAAAGG G 81

(2) INFORMATION FOR SEQ ID NO:13:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31
(B) TYPE: nucleic acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:x:

CGCGGATCCG ATGACAAAGG GAAAAACAAG G 31

(2) INFORMATION FOR SEQ ID NO:14:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 30
(B) TYPE: nucleic acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

CTCGGATCCA ACAAGGATGT TACAGGCTCC 30

(2) INFORMATION FOR SEQ ID NO:15:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 27
(B) TYPE: nucleic acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CGCGGATCCG GTCGCGGCTC AAGTGAG 27

(2) INFORMATION FOR SEQ ID NO:16:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 30
(B) TYPE: nucleic acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

CGCGGATCCG AGAAAACAGT GGCAGCTGTC 30

(2) INFORMATION FOR SEQ ID NO:17:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 28
(B) TYPE: nucleic acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

CGCGGATCCG CTGTACAGAA GGACAAGG 28

(2) INFORMATION FOR SEQ ID NO:18:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 33
(B) TYPE: nucleic acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

CGCGGATCCA AGGATGTAAA TGCTGGTTCT CAT 33

(2) INFORMATION FOR SEQ ID NO:19:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 30
(B) TYPE: nucleic acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: linear
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

CTCGGATCCG GTTCTCATGG GAAAATTGTG 30

(2) INFORMATION FOR SEQ ID NO:20:

CGCGGATCCG TGAAGGCTC

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 51
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

AGTGTGAGAG GAGATCTTCA AGTGCTTGCA CGAAAAGCAG CAAGACCACT 50
 T 51

- (2) INFORMATION FOR SEQ ID NO:21:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Ser Val Arg Gly Asp Leu Gln Val Leu Ala Arg Lys Ala Ala Arg
 5 10 15
 Pro Leu
 17

- (2) INFORMATION FOR SEQ ID NO:22:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 87
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

CAGCTGCAGT CCGTGAGAGG AGATCTTCAA GTGCTTGCAC GAAAAGCAGC 50
 AAGACCACTT AAGAAAGATA AAGAAGATGA CAAAGGG 87

- (2) INFORMATION FOR SEQ ID NO:23:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 83
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

CAGCTGCAGA GTGTGAGAGG AGATCTTCAA GTGCTTGCAC GAAAAGCAGC 50
 AAGACCACTT TCAGGCACTC AGCCAAGTGT GGC 83

- (2) INFORMATION FOR SEQ ID NO:24:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 84
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

CGCGGATCCG TGAGAGGAGA TCTTCAAGTG CTTGCACGAA AAGCAGCAAG 50
 ACCACTTAAG AAAGATAAAG AAGATGACAA AGGG 84

- (2) INFORMATION FOR SEQ ID NO:25:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 33
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

CAGCTGCAGT CCGAGAAAAC AGTGGCAGCT GTC 33

- (2) INFORMATION FOR SEQ ID NO:26:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 34
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

CAGCTGCAGT CCGACACTGG AGCCACAAAG AAAG 34

- (2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 37
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

CAGCTGCAGT CCAAGAAAGA CAAAGAAGAT GACAAAG

37

- (2) INFORMATION FOR SEQ ID NO:28:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 24
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

TCCATTATTA ATTTCGAAAA GTTG 24

- (2) INFORMATION FOR SEQ ID NO:29:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 8
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Ser Ile Ile Asn Phe Glu Lys Leu
 5 8

- (2) INFORMATION FOR SEQ ID NO:30:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 56
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

CAGCTGCAGT CCATTATTAA TTTCGAAAAG TTGTCAGGCA CTCAGCCAAC 50
 TGTGGC 56

- (2) INFORMATION FOR SEQ ID NO:31:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 56
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

CAGCTGCAGT CCGAGAAAAC AGTGGCAGCT GTC

33

- (2) INFORMATION FOR SEQ ID NO:32:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 22
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

AGCTCCATAC ATAGCTGAGA CA 22

- (2) INFORMATION FOR SEQ ID NO:33:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: Single
 (D) TOPOLOGY: linear
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

TGGTTGAACC AAGAGGCGAA 20